

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of: Janne L Aaltonen *et al.*

Confirmation No.: 6181

Application No.: 10/803,684

Examiner: Ho T. Shiu

Filed: March 18, 2004

Group Art Unit: 2457

For: SYSTEM AND ASSOCIATED TERMINAL, METHOD AND COMPUTER
PROGRAM PRODUCT FOR UPLOADING CONTENT

Commissioner for Patents
Alexandria, VA 22313-1450

REINSTATED APPEAL BRIEF

Dear Commissioner:

This is a reinstated Appeal Brief, based on an earlier Appeal Brief filed March 28, 2011. In view of the reopening of prosecution by the Examiner and the issue of a final Office Action of February 22, 2012, Appellants initiates this new Appeal Brief under 37 CFR 41.37, responsive to a new Notice of Appeal filed on April 20, 2012 under 37 CFR 41.31.

It is understood that the previously paid notice of appeal fee and appeal brief fee will be applied to this new Appeal Brief.

I. REAL PARTY IN INTEREST

The real party in interest is Nokia Corporation, a corporation organized under the laws of Finland and having a place of business at Keilalahdentie 4, FIN-02150 Espoo, Finland. The above referenced patent application is assigned to Nokia Corporation.

II. RELATED APPEALS AND INTERFERENCES

The related appeal(s) and/or interference(s) include an earlier Appeal Brief filed March 28, 2011.

III. SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed subject matter relates to uploading content from the sender to a recipient after determining an upload schedule relating to the time and/or manner of uploading the content. After an interruption occurs in the upload session, the sender sends to the receiver a list of completely uploaded data packet identifiers each uniquely identifying one corresponding data packet within the upload session thereby reestablish the upload session.

Independent claim 23 reads as follows:

23. An apparatus comprising (*see, e.g.*, 32 in Fig. 4; 102 in FIG. 6, 9 and11):
 - at least one processor (*see, e.g.*, 64 in FIG. 4); and
 - at least one memory including computer program code for one or more programs (*see, e.g.*, 66, 68 in FIG. 4),
 - the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,
 - determine to transmit an upload request for content from an apparatus via a network to a recipient, wherein the content comprising a plurality of data packets (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 36, line 24 to p. 37, line 7; 102, 104 in FIG. 6, 9 and11);

receive from the recipient in response to the upload request, an upload schedule relating to at least one of a time and a manner of uploading the content in an upload session (*see, e.g., Abstract, p. 20, lines 12-28, p. 25, line 25 to p. 26, line 3*); determine to upload the content to the recipient in accordance with the upload schedule (*see, e.g., Abstract, p. 25, line 25 to p. 26, line 3*); after an interruption occurs in the upload session, receive a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session (*see, e.g., p. 40, lines 1-17*); and reestablish the upload session to upload to the recipient each of the remaining packets that is not completely uploaded (*see, e.g., p. 40, line 18 to p. 41, line 18*).

Dependent claims 40 and 42-44 read as follows:

40. An apparatus according to Claim 39, wherein the apparatus is further caused to upload the at least one information packet that enables the recipient to monitor the uploaded data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, to thereby enable the recipient to recover the content such that the recipient receives the plurality of data packets (*see, e.g., p. 37, line 6 to p. 39, line 30; FIG. 10*).

42. An apparatus according to Claim 41, wherein the remaining portion of the content is uploaded based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 41, line 19 to p. 42, line 4).

43. An apparatus according to Claim 41, wherein the length of the received portion of the content is received in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is uploaded in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining portion of the content including header information comprising one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

44. An apparatus according to Claim 23, wherein the apparatus is further caused to send a hypertext transfer protocol (HTTP) HEAD request to the recipient, and the remaining packets are uploaded in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

Independent claim 45 reads as follows:

45. An apparatus comprising (*see, e.g.*, 36 in FIG. 3; 104 in FIG. 6, 9 and 11):
at least one processor (*see, e.g.*, 48 in FIG. 3); and
at least one memory including computer program code for one or more programs (*see, e.g.*,
54, 56 in FIG. 3),

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,

receive an upload request for content from a sender via a network, wherein the content comprising a plurality of data packets (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 36, line 24 to p. 37, line 7; 102 in FIG. 6, 9 and11);

determine, in response to the request, an upload schedule relating to at least one of a time and a manner of the sender uploading the content to the apparatus in an upload session (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 25, line 25 to p. 26, line 3);

receive the content from the sender in accordance with the upload schedule (*see, e.g.*, Abstract, p. 25, line 25 to p. 26, line 3);

track during the upload session received data packets and assembling a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session (*see, e.g.*, p. 39, lines 23-30); and

after an interruption occurs in the upload session, determine to transmit the list of completely uploaded data packet identifiers to the sender for transmitting to the apparatus each of the remaining packets that is not completely uploaded (*see, e.g.*, p. 40, lines 1-17).

Independent claim 58 reads as follows:

58. A method comprising:

receiving an upload request for content from a sender via a network at an apparatus, wherein the content comprising a plurality of data packets (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 36, line 24 to p. 37, line 7; 102, 104 in FIG. 6, 9 and11);

determining, in response to the request, an upload schedule relating to at least one of a time and a manner of the sender uploading the content to the apparatus in an upload session (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 25, line 25 to p. 26, line 3); receiving the content from the sender at the apparatus in accordance with the upload schedule (*see, e.g.*, Abstract, p. 25, line 25 to p. 26, line 3); tracking at the apparatus during the upload session received data packets and assembling a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session (*see, e.g.*, p. 39, lines 23-30); and after an interruption occurs in the upload session, determining to transmit the list of completely uploaded data packet identifiers from the apparatus to the sender for transmitting to the apparatus each of the remaining packets that is not completely uploaded (*see, e.g.*, p. 40, lines 1-17).

Dependent claims 75 and 77-79 read as follows:

75. A method according to Claim 58, further comprising:
monitoring the received data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content (*see, e.g.*, p. 37, line 6 to p. 39, line 30; FIG. 10); and

if an interruption occurs in uploading the plurality of data packets, recovering the content such that the apparatus receives the plurality of data packets (*see, e.g.*, p. 38, lines 6-17; p. 39, lines 13-22).

77. A method according to Claim 76, wherein receiving a remaining portion of the content comprises receiving a remaining portion of the content based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 41, line 19 to p. 42, line 4).

78. A method according to Claim 76, wherein sending a length of the received portion of the content comprises sending a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is received in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining portion of the content including header information that includes one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

79. A method according to Claim 58, further comprising receiving a hypertext transfer protocol (HTTP) HEAD request from the sender at the apparatus, wherein receiving a remaining portion of the content comprises receiving the remaining packets in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

Independent claim 80 reads as follows:

80. A computer program product for uploading content, the computer program product comprising at least one computer-readable storage medium having computer-readable program code portions stored therein that in response to execution by a processor, cause an apparatus to at least perform the following:

receiving an upload request for content from a sender via a network, wherein the content comprising a plurality of data packets (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 36, line 24 to p. 37, line 7; 102, 104 in FIG. 6, 9 and 11);

determining, in response to the request, an upload schedule relating to at least one of a time and a manner of the sender uploading the content to the apparatus in an upload session (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 25, line 25 to p. 26, line 3);

receiving the content from the sender in accordance with the upload schedule (*see, e.g.*, Abstract, p. 25, line 25 to p. 26, line 3);

tracking during the upload session received data packets and assembling a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session (*see, e.g.*, p. 39, lines 23-30); and

after an interruption occurs in the upload session, determining to transmit the list of completely uploaded data packet identifiers to the sender for transmitting to the apparatus each of the remaining packets that is not completely uploaded (*see, e.g.*, p. 40, lines 1-17).

Dependent claims 97 and 99-101 read as follows:

97. A computer program product according to Claim 96, wherein the apparatus is caused to further perform:

monitoring the received data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content (*see, e.g.*, p. 37, line 6 to p. 39, line 30; FIG. 10); and

if an interruption occurs in uploading the plurality of data packets, recovering the content such that the apparatus receives the plurality of data packets (*see, e.g.*, p. 38, lines 6-17; p. 39, lines 13-22).

99. A computer program product according to Claim 98, wherein the remaining portion of the content is received based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 41, line 19 to p. 42, line 4).

100. A computer program product according to Claim 98, wherein sending a length of the received portion of the content comprises sending a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is received in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining portion of the content including header information that includes one or more bit

ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

101. A computer program product according to Claim 100, further comprising receiving a hypertext transfer protocol (HTTP) HEAD request from the sender at the apparatus, wherein receiving a remaining portion of the content comprises receiving the remaining packets in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

Independent claim 102 reads as follows:

102. A method comprising:

determining to transmit an upload request for content from an apparatus via a network to a recipient, wherein the content comprising a plurality of data packets (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 36, line 24 to p. 37, line 7; 102, 104 in FIG. 6, 9 and11);
receiving from the recipient at the apparatus, in response to the upload request, an upload schedule relating to at least one of a time and a manner of uploading the content in an upload session (*see, e.g.*, Abstract, p. 20, lines 12-28, p. 25, line 25 to p. 26, line 3);
determining by the apparatus to upload the content to the recipient in accordance with the upload schedule (*see, e.g.*, Abstract, p. 25, line 25 to p. 26, line 3);

after an interruption occurs in the upload session, receiving at the apparatus a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session (*see, e.g.*, p. 40, lines 1-17); and reestablishing by the apparatus the upload session to upload to the recipient each of the remaining packets that is not completely uploaded (*see, e.g.*, p. 40, line 18 to p. 41, line 18).

Dependent claims 119, 121-123, and 126-128 read as follows:

119. A method according to Claim 118, further comprising:
uploading the at least one information packet that enables the recipient to monitor the uploaded data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content (*see, e.g.*, p. 37, line 6 to p. 39, line 30; FIG. 10), and
if an interruption occurs in uploading the plurality of data packets, recovering the content such that the recipient receives the plurality of data packets (*see, e.g.*, p. 38, lines 6-17; p. 39, lines 13-22).

121. A method according to Claim 120, further comprising uploading a remaining portion of the content based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 41, line 19 to p. 42, line 4).

122. A method according to Claim 120, further comprising receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique; and uploading the remaining portion of the content in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining portion of the content including header information comprising one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

123. A method according to Claim 122, further comprising:

sending a hypertext transfer protocol (HTTP) HEAD request to the recipient; and uploading the remaining packets are uploaded in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets (*see, e.g.*, p. 40, line 18 to p. 41, line 2; p. 41, line 19 to p. 42, line 4).

126. A method according to Claim 78, wherein the at least one information packet further includes information uniquely describing the data packets before or after the information packet (*see, e.g.*, p. 37, line 6 to p. 38, line 5).

127. A method according to Claim 126, wherein information uniquely describing the data packets includes a sequence of packet cyclic redundancy checks (*see, e.g.*, p. 37, lines 6-20).

128. A method according to Claim 78, wherein the number of data packets to be received between two information packets varies (*see, e.g.*, p. 38, lines 6-17).

IV. ARGUMENT**GROUPING OF CLAIMS**

For the convenience of the Honorable Board of Patent Appeals and Interferences (“Board”), since all independent claims include the same or similar distinctive features, Appellants select independent claim 23 of the group of independent claims 23, 45, 58, 80, and 102 to argue. Appellants will therefore focus on Section A above that includes independent claim 23.

The appealed claims do not stand or fall together. Appellants separately argue the patentability of: claims 40, 42, 75, 77, 97, 99, 119, and 121 in Section D; and claims 43, 44, 78, 79, 100, 101, 122, 123, and 126-128 in Section H.

A. CLAIMS 23, 34, 35, 45, 51, 52, 58, 69, 70, 80, 91, 92, 102, 113, 114, 118, 129, AND 130 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL. AND NA

As stated above, the Examiner bears initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention under any statutory provision. In rejecting a claim under 35 U.S.C. §103(a), the Examiner is required to provide a factual basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford*, 357 F.2d 385, 148 USPQ 721 (CCPA 1966); *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Further, in rejecting a claim under 35 U.S.C. §103(a) it is incumbent upon the Examiner to establish the requisite motivation. As maintained by the Supreme Court of the United States in *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727 at 1741, an obviousness “analysis should be made explicit.” See, *In re Kahn*, 441 F.3d 977, 988 (C.A. Fed. 2006)

(“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusions of obviousness”). Indeed, the Examiner is required to make specific factual findings, not generalizations. *See M.P.E.P. §2144.08 II. A. 5.* That initial burden required by procedural due process of law has not been discharged.

Appellants submit that the Examiner’s obviousness rejection is not factually viable, as all features of the claims are not disclosed by the applied references, taken singly or in combination. As admitted by the Examiner in the final Office Action of February 22, 2012 (p. 5, 1st paragraph), *Airy et al.* (US 2002/0142780) and *Chu et al.* (US 20020049853) do not disclose “**after an interruption occurs** in the upload session, receiving a **list of completely uploaded data packet identifiers** each of which uniquely identifies one corresponding data packet within the upload session.”

The Examiner asserted that *Na* (US 2006/0129631) provides the missing teachings at [0120] and [0132]. Paragraphs [0120] and [0132] states the following:

[0120] Receiving the request message, the application server 40 issues a response message including the **range** of the message body that should be additionally uploaded if the previously uploaded portion exists. If not, the response message includes a message such as ‘503 Service Unavailable’.

[0132] The statud line 260 includes a message (e.g., HTTP/1.1[SP]200[SP]OK[CRLF]). The header 262 includes date information (Date, e.g., Sun, 08 Apr 18:46:12 GMT), server information (Server, e.g., video MMSC (Unix)), a connection status field (Connection, e.g., Close), a cache control field indicative of the control status of a temporary file of the data being uploaded (Cache-Control, e.g., No-Cache), a content type field (Content-Type, e.g., text/vnd.wap.mmsheaders), the message body ID (X-Upload-Etag, e.g., MIN_MMDDHHMMSS), and the range of the content that has been uploaded successfully before the upload error (**X-Upload-Range, e.g., 1-1000/1500**).

To reduce the time for processing request and response messages required for uploading each segment, *Na*'s mobile communication terminal 10 sends an upload request message to the application server 40 and then uploads a specified number (X-Ack-Seq) of data segments until an acknowledgement message for the upload is received ([0066]). However, *Na* requires a mobile communication terminal 10 to **sequentially** upload as many segments of the media data as is specified by the X-Ack-Seq field that is included in the request message in various embodiments (e.g., S12 in FIG. 10; [0079], [0086], [0093], [0100], [0106]). By way of example, paragraphs [0078] and [0079] describe the following:

[0078] Connected to the application server 40 through the mobile communication network 20 and the packet data serving node (PDSN) 30 (or wireless internet), the mobile communication terminal 10 sends a request message for unloading particular media data to the application server 40, the request message comprising the command 100, the header 102 including the number of total segments of the media data (X-Total-Seq), the sequence number of the segment to be uploaded (X-Seg-No, e.g., 1), and a message ID, and the message body 104 as shown in FIG. 2 (S10).

[0079] The mobile communication terminal 10 **sequentially** uploads as many segments of the media data as is specified by the X-Ack-Seq field included in the request message (S12).

If a data upload is stopped by an unintended communication error during the upload process, or the mobile communication terminal 10 tries to resume an upload cancelled by the user, since the segments of the media data are **sequentially** received at the application server 40, the server 40 only needs to send a response message including the range of the message body that has been uploaded successfully before the upload error or upload cancellation to the mobile communication terminal 10 to allow the stopped data upload to be resumed ([0115]). *Na* also assumes that the segments of the media data are **sequentially** received at the application server 40 ([0004]). Paragraph [0004] states the following:

[0004] In the case where a mobile communication terminal uploads particular media data to a server on the wireless network, the mobile communication terminal issues a request message each time it uploads a segment of the media data in accordance with the HTTP 1.1 protocol and the server issues a response message for each request message, thereby performing **successive** uploads of the segments.

Therefore, *Na* merely transmits a range of the content that has been received **sequentially** and successfully where the range (e.g., 1-1000/1500) is depicted in bytes (e.g., 1500 is the size of the whole data in bytes).

The claimed subject matter addresses **packet delivery**, whereby the packets are not received sequentially at a destination apparatus. In contrast, *Na*'s byte range reporting approach requires sequentially receiving the segments which is not realistic in the claimed **packet delivery**. In addition, *Na*'s successfully received **range** of the content depicted in bytes (e.g., 1-1000/1500) cannot convey a list of completely received data packet identifiers that correspond to **many ranges** of IDs. In this case, the list of completely received data packet identifiers may correspond to as many applicable ranges of packet identifiers as actually occur. Therefore, *Na* does not disclose "transmission, after the occurrence of the upload session, of **a list of completely uploaded data packet identifiers** where each of the identifiers uniquely identifies one **corresponding data packet within the upload session**, much less all of the claimed features.

Based on the foregoing, it is apparent that *Na* neither discloses nor suggests the claimed features that are admittedly missing from the primary reference to *Airy et al.* Therefore, even if, *arguendo*, the applied references are combined as proposed by the Examiner, and Appellants do not agree that the requisite basis for the asserted motivation has been established, the features of independent claims 23, 45, 58, 80, and 102 would not result.

B. CLAIMS 24, 29, 30, 46, 64, 65, 80, 86, 87, 103, 108, AND 109 ARE NOT RENDERED OBVIOUS BY *AIRY ET AL.* IN VIEW OF *CHU ET AL.*, *NA*, AND *BROWN ET AL.*

Claims 24, 29, and 30 depend from independent claim 23; claim 46 depends from independent claim 45; claims 64 and 65 depend from independent claim 58; claims 86 and 87 depend from independent claim 80; and claims 103, 108, and 109 depend from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 45, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session.” These deficiencies are not cured by *Brown et al.*, relied upon for the features including “deleting the content after uploading the content to the recipient.”

Appellants therefore submit that the imposed rejection of claims 24, 29, 30, 46, 64, 65, 80, 86, 87, 103, 108, and 109 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu*, *Na* and *Brown et al.* is not factually or legally viable.

C. CLAIMS 25-28, 46, 47, 60-63, 82- 85, AND 104-108 ARE NOT RENDERED OBVIOUS BY *AIRY ET AL.* IN VIEW OF *CHU ET AL.*, *NA*, AND *MCDONNELL ET AL.*

Claims 25-28 depend from independent claim 23; claims 46 and 47 depend from independent claim 45; claims 60-63 depend from independent claim 58; claims 82-85 depend from independent claim 80; and claims 104-108 depend from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 45, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references

do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session.” These deficiencies are not cured by *McDonnell et al.*, relied upon for the features of “receive information reflecting a current state of at least one of the recipient or the apparatus before uploading the content.”

Appellants therefore submit that the imposed rejection of claims 25-28, 46, 47, 60-63, 82-85, and 104-108 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu, Na* and *McDonnell et al.* is not factually or legally viable.

D. CLAIMS 33, 37, 39-42, 50, 53, 54, 56, 68, 72, 73, 75-77, 84-95, 97-99, 112, 116, 117, 119, 120, AND 121 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, AND KOHNO

Claims 33, 37, 39-42 depend from independent claim 23; claims 50, 53, 54, and 56 depend from independent claim 45; claims 68, 72, 73, and 75-77 depend from independent claim 58; claims 84-95, and 97-99 depend from independent claim 80; and claims 112, 116, 117, and 120 depend from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 45, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session.” These deficiencies are not cured by *Kohno*, relied upon for the features including “the content including a plurality of pieces,” “information packets,” and, etc.

With respect to claims 40, 75, 97, and 119, the Examiner relied on *Na*’s col. 4, lines 18-29 (p. 21, 2nd paragraph of the Office Action) as information packets. With respect to claims 42, 77, 99, and 121, the Examiner relied on *Na*’s col. 1, lines 44-59 and col. 6, lines 1-8 (p. 23, last

paragraph of the final Office Action) as bit ranges. However, *Na*'s publication is formatted by paragraphs, rather than columns. Appellants invite the Examiner to update the citations.

Appellants therefore submit that the imposed rejection of claims 33, 37, 39-42, 50, 53, 54-57, 68, 72, 73, 75-77, 94-96, 97-99, 112, 116, 117, 119-121, and 125 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu*, *Na* and *Kohno* is not factually or legally viable.

E. CLAIMS 32, 49, 67, 89, AND 112 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, AND SQUIBBS ET AL.

Claim 32 depends from independent claim 23; claim 49 depends from independent claim 45; claim 67 depends from independent claim 58; claim 89 depends from independent claim 80; and claim 112 depends from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 45, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of "after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session." These deficiencies are not cured by *Squibbs et al.*, which is relied upon for a supposed teaching of "the upload schedule including at least one instruction defining at least one deadline for uploading the content."

Appellants therefore submit that the imposed rejection of claims 32, 49, 67, 89, and 112 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu*, *Na* and *Squibbs et al.* is not factually or legally viable.

F. **CLAIMS 36, 71, 93, AND 115 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, AND KOBAYASHI ET AL.**

Claim 36 depends from independent claim 23; claim 71 depends from independent claim 58; claim 93 depends from independent claim 80; and claim 115 depends from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session.” These deficiencies are not cured by *Kobayashi et al.*, which is relied upon for a supposed teaching of “receiving a trigger to send an upload request.”

Appellants therefore submit that the imposed rejection of claims 36, 71, 93, and 115 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu, Na* and *Kobayashi et al.* is not factually or legally viable.

G. **CLAIMS 31, 66, 88, AND 110 ARE AL. IN VIEW OF CHU ET AL., NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, BROWN AND KOHNO**

Claim 31 depends from independent claim 23; claim 66 depends from independent claim 58; claim 88 depends from independent claim 80; and claim 110 depends from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies

one corresponding data packet within the upload session.” These deficiencies are not cured by *Kohno*, which is relied upon for a supposed teaching of “breaking up the upload content into a plurality of portions.”

Appellants therefore submit that the imposed rejection of claims 31, 66, 88 and 110 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu, Na, Brown* and *Kohno* is not factually or legally viable.

H. CLAIMS 43, 44, 78, 79, 100, 101, 122, 123, 126-128 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, AND DEEN

Claims 43 and 44 depend from independent claim 23; claims 78, 79 and 126-128 depend from independent claim 58; claims 101 and 101 depend from independent claim 80; and claims 122 and 123 depend from independent claim 102. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claims 23, 45, 58, 80, and 102 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of “after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session.” These deficiencies are not cured by *Deen*, which is relied upon for supposed features of “a HTTP POST or a HTTP PUT technique.”

In addition, the cited portions in *Airy* and *Na* are silent with respect to the specific features of **information packet** recited in claims 126-128. With respect to claims 126 and 128, the Examiner relied on *Na*’s col. 4, lines 18-29 (p. 21, 2nd paragraph of the final Office Action) as information packets. With respect to claims 43, 44, 78, 79, 100, 101, 122, and 123 the Examiner relied on *Na*’s col. 1, lines 44-59 and col. 6, lines 1-8 (p. 23, last paragraph of the

Office Action) as bit ranges and packet identifiers. However, *Na*'s publication is formatted by paragraphs, rather than columns. Appellants invite the Examiner to update the citations.

Appellants therefore submit that the imposed rejection of claims 43, 44, 78, 79, 100, 101, 122, 123, and 126-128 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu*, *Na* and *Deen* is not factually or legally viable.

I. CLAIMS 74, 124, AND 125 ARE NOT RENDERED OBVIOUS BY AIRY ET AL. IN VIEW OF CHU ET AL., NA, AND HARRINGTON ET AL.

Claims 74, 125, and 125 depends from independent claim 58. Appellants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 58 under 35 U.S.C. §103(a), particularly the fact that these references do not disclose the claim features of "after an interruption occurs in the upload session, receiving a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session." These deficiencies are not cured by *Harrington et al.*, which is relied upon for a supposed teaching of "pushing the upload schedule to the sender."

Appellants therefore submit that the imposed rejection of claims 74, 124, and 125 under 35 U.S.C. §103(a) based on *Airy* in view of *Chu*, *Na* and *Harrington et al.* is not factually or legally viable.

V. CONCLUSION AND PRAYER FOR RELIEF

Based on the foregoing, it is apparent that none of the Examiner's rejections under 35 U.S.C. § 103(a) is factually or legally viable. Appellants therefore solicit the Honorable Board to reverse each of the Examiner's rejections.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

including extension of time fees, to Deposit Account 504213 and please credit any excess fees to such deposit account.

Respectfully Submitted,

DITTHAVONG MORI & STEINER, P.C.

June 14, 2012
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VI. CLAIMS APPENDIX

1. - 22. (Canceled)

23. An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,

the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following,

determine to transmit an upload request for content from an apparatus via a network to a recipient, wherein the content comprising a plurality of data packets;

receive from the recipient in response to the upload request, an upload schedule relating to at least one of a time and a manner of uploading the content in an upload session;

determine to upload the content to the recipient in accordance with the upload schedule;

after an interruption occurs in the upload session, receive a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session; and

reestablish the upload session to upload to the recipient each of the remaining packets that is not completely uploaded.

24. An apparatus according to Claim 23, wherein the apparatus is further caused to:
delete the content from the memory after uploading the content to the recipient.

25. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction dependent upon a state of at least one of the recipient or the apparatus, and wherein the apparatus is further caused to:

receive information reflecting a current state of at least one of the recipient or the apparatus before uploading the content, wherein the apparatus uploads the content based upon the at least one instruction dependent upon the state, and the information reflecting the current state of at least one of the recipient or the apparatus.

26. An apparatus according to Claim 25, wherein the apparatus is further caused to receive information including at least one of a connectivity, location, actual movement or predicted movement of at least one of the recipient or the apparatus.

27. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction dependent upon a state of at least one network over which the content is uploaded, and wherein the apparatus is further caused to:

receive information reflecting a current state of the at least one network before uploading the content, wherein the content is uploaded based upon the at least one instruction dependent upon the state, and the information reflecting the current state, of the at least one network.

28. An apparatus according to Claim 27, wherein the information includes at least one of traffic on the at least one network or bandwidth available to at least one of the recipient or the apparatus on the at least one network.

29. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction defining processing the content, and wherein the apparatus is further caused to: process the content, and upload the processed content.

30. An apparatus according to Claim 29, wherein the apparatus processes the content by at least one of transcoding or truncating at least a portion of the content.

31. An apparatus according to Claim 29, wherein the apparatus processes the content by breaking up the upload content into a plurality of portions.

32. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and wherein the content is uploaded based upon the at least one deadline.

33. An apparatus according to Claim 23, wherein the content includes a plurality of pieces, wherein the upload schedule includes at least one instruction comprising an ordering of the plurality of pieces of the content, and wherein at least a portion of the content is uploaded based upon the ordering of the plurality of pieces of the content.

34. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the content is uploaded, and wherein the content is uploaded based upon the content and the at least one network.

35. An apparatus according to Claim 23, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and wherein the content is uploaded based upon the at least one upload time.

36. An apparatus according to Claim 23, the apparatus is further caused to:
receive a trigger to send an upload request, wherein the upload request is sent in response to
the trigger independent of interaction from a user of the apparatus.

37. An apparatus according to Claim 23, wherein the upload request is sent with an upload descriptor that enables at least one of the apparatus or the recipient to determine if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, enables the recipient to recover the content.

38. An apparatus according to Claim 23, wherein the apparatus is further caused to delete the uploaded content from a storage of the sender without interaction with a user of the sender, after completing the upload session.

39. An apparatus according to Claim 23, wherein uploading the content comprises uploading the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

40. An apparatus according to Claim 39, wherein the apparatus is further caused to upload the at least one information packet that enables the recipient to monitor the uploaded data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, to thereby enable the recipient to recover the content such that the recipient receives the plurality of data packets.

41. An apparatus according to Claim 23, wherein the apparatus is further caused to:

determine if an interruption occurs in uploading the content such that the recipient only receives a portion of the content; and
if an interruption occurs in uploading the content, receive a length of the received portion of the content, and thereafter upload a remaining portion of the content to the recipient.

42. An apparatus according to Claim 41, wherein the remaining portion of the content is uploaded based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

43. An apparatus according to Claim 41, wherein the length of the received portion of the content is received in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is uploaded in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining portion of the content including header information comprising one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

44. An apparatus according to Claim 23, wherein the apparatus is further caused to send a hypertext transfer protocol (HTTP) HEAD request to the recipient, and the remaining packets are uploaded in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets.

45. An apparatus comprising:

at least one processor; and

at least one memory including computer program code for one or more programs,
the at least one memory and the computer program code configured to, with the at least one
processor, cause the apparatus to perform at least the following,
receive an upload request for content from a sender via a network, wherein the content
comprising a plurality of data packets;
determine, in response to the request, an upload schedule relating to at least one of a
time and a manner of the sender uploading the content to the apparatus in an
upload session;
receive the content from the sender in accordance with the upload schedule;
track during the upload session received data packets and assembling a list of
completely uploaded data packet identifiers each of which uniquely identifies one
corresponding data packet within the upload session; and
after an interruption occurs in the upload session, determine to transmit the list of
completely uploaded data packet identifiers to the sender for transmitting to the
apparatus each of the remaining packets that is not completely uploaded.

46. An apparatus according to Claim 45, wherein the upload schedule includes at least one
instruction dependent upon a state of at least one of the apparatus or the sender, and wherein the
content is received based upon the at least one instruction dependent upon the state of at least one
of the apparatus or the sender, and information reflecting a current state of at least one of the
apparatus or the sender, the sender having received the information reflecting the current state
before uploading the content to the apparatus.

47. An apparatus according to Claim 45, wherein the upload schedule includes at least one instruction dependent upon a state of at least one network over which the content is uploaded, and the content is received based upon the at least one instruction dependent upon the state of the at least one network, and information reflecting a current state of the at least one network, the sender having received the information reflecting the current state before uploading the content to the apparatus.

48. An apparatus according to Claim 45, wherein the upload schedule includes at least one instruction defining processing the content to thereby direct the sender to process the content, and the processed content is received.

49. An apparatus according to Claim 45, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and the content is received based upon the at least one deadline.

50. An apparatus according to Claim 45, wherein the content includes a plurality of pieces, and wherein determining an upload schedule comprises the upload schedule includes an ordering of the plurality of pieces of the content, and at least a portion of the content is received based upon the ordering of the plurality of pieces of the content.

51. An apparatus according to Claim 45, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the content is uploaded, and the content is received based upon the content and the at least one network.

52. An apparatus according to Claim 45, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content, and the content is received based

upon the at least one upload time, the at least one upload time of the content being determined based upon the content and at least one network over which the content is uploaded.

53. An apparatus according to Claim 45, wherein the apparatus is further caused to:
receive an upload descriptor and thereafter receiving the plurality of data packets;
determine if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content; and
if an interruption occurs in uploading the plurality of data packets, recover the content based upon the upload descriptor.

54. An apparatus according to Claim 53, wherein recovering the content comprises:
determining at least one remaining data packet to be uploaded to the apparatus to thereby complete uploading of the plurality of data packets of the content;
instructing the sender to send the at least one remaining data packet; and
receiving the at least one remaining data packet such that the apparatus receives the plurality of data packets.

55. An apparatus according to Claim 53, wherein the apparatus is further caused to push the upload schedule to the sender thereby automatically uploading the content in accordance with the upload schedule, the upload descriptor includes information of a preferred time, place and technology for uploading the content, and the upload session is interrupted by user intervention.

56. An apparatus according to Claim 45, wherein the apparatus is further caused to:
monitor the uploaded data packets to determine, based upon at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content; and

if an interruption occurs in uploading the plurality of data packets, recover the content such that the apparatus receives the plurality of data packets.

57. An apparatus according to Claim 45, wherein the apparatus is further caused to: determine an interruption occurs in uploading the content when the apparatus only receives a portion of the content;

if an interruption occurs in uploading the content, send to the sender a length of the received portion of the content to thereby enable the sender to thereafter upload a remaining portion of the content; and

receive a remaining portion of the content to thereby recover the content such that the apparatus receives all of the content.

58. A method comprising:

receiving an upload request for content from a sender via a network at an apparatus, wherein the content comprising a plurality of data packets;

determining, in response to the request, an upload schedule relating to at least one of a time and a manner of the sender uploading the content to the apparatus in an upload session;

receiving the content from the sender at the apparatus in accordance with the upload schedule; tracking at the apparatus during the upload session received data packets and assembling a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session; and

after an interruption occurs in the upload session, determining to transmit the list of completely uploaded data packet identifiers from the apparatus to the sender for

transmitting to the apparatus each of the remaining packets that is not completely uploaded.

59. (Cancelled)

60. A method according to Claim 58, wherein the upload schedule includes at least one instruction dependent upon a state of at least one of the apparatus or the sender, and wherein the content is received based upon the state of at least one of the apparatus or the sender, and information reflecting a current state of at least one of the apparatus or the sender, the sender having received the information reflecting the current state before uploading the content to the apparatus.

61. A method according to Claim 60, wherein the state of at least one of the apparatus or the sender comprises at least one of a connectivity, location, actual movement or predicted movement of at least one of the apparatus or the sender.

62. A method according to Claim 58, wherein the upload schedule includes at least one instruction dependent upon a state of at least one network over which the content is uploaded, and wherein the content is received based upon the state of the at least one network, and information reflecting a current state of the at least one network, the sender having received the information reflecting the current state before uploading the content to the apparatus.

63. A method according to Claim 62, wherein the state of the at least one network comprises at least one of traffic on the at least one network or bandwidth available to at least one of the apparatus or the sender on the at least one network.

64. A method according to Claim 58, wherein the upload schedule includes at least one instruction defining processing the content, and wherein receiving the content comprises receiving the processed content.

65. A method according to Claim 64, wherein the upload schedule includes at least one instruction defining at least one of transcoding or truncating at least a portion of the content, and wherein receiving the content comprises receiving the at least one of the transcoded or truncated portion of the content.

66. A method according to Claim 64, wherein the upload schedule includes at least one instruction defining breaking up the upload content into a plurality of portions, and wherein receiving the content comprises receiving the portions of the upload content.

67. A method according to Claim 58, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and wherein the content is received based upon the at least one deadline.

68. A method according to Claim 58, wherein the content includes a plurality of pieces, wherein the upload schedule includes at least one instruction comprising an ordering of the plurality of pieces of the content, and wherein receiving the content comprises receiving at least a portion of the content based upon the ordering of the plurality of pieces of the content.

69. A method according to Claim 58, wherein the upload schedule includes at least one instruction dependent based upon the content and at least one network over which the content is uploaded, and wherein the content is received based upon the content and the at least one network.

70. A method according to Claim 58, wherein the upload schedule includes at least one instruction dependent based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and wherein the content is received based upon the at least one upload time.

71. A method according to Claim 58, further comprising:

sending a trigger to the sender to send an upload request before receiving the upload request,
wherein an upload request is received in response to the trigger independent of interaction
from a user of the sender.

72. A method according to Claim 58, further comprising:

determining an interruption occurs in uploading the plurality of data packets when the apparatus receives less than the plurality of data packets of the content; and
if an interruption occurs in uploading the plurality of data packets, recovering the content
based upon the list such that the apparatus receives the plurality of data packets.

73. A method according to Claim 72, wherein recovering the content comprises:

determining at least one remaining data packet to be received at the apparatus to thereby complete uploading of the plurality of data packets of the content;
instructing the sender to send the at least one remaining data packet; and
receiving the at least one remaining data packet such that the apparatus receives all of the content.

74. A method according to Claim 124, further comprising:

pushing the upload schedule to the sender thereby automatically uploading the content in accordance with the upload schedule, wherein the upload descriptor includes information

of a preferred time, place and technology for uploading the content, and the upload session is interrupted by user intervention.

75. A method according to Claim 58, further comprising:

monitoring the received data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content; and
if an interruption occurs in uploading the plurality of data packets, recovering the content such that the apparatus receives the plurality of data packets.

76. A method according to Claim 58, further comprising:

determining an interruption occurs in uploading the content when the apparatus only receives a portion of the content;
if an interruption occurs in uploading the content, sending a length of the received portion of the content to the sender; and
receiving a remaining portion of the content to thereby recover the content such that the apparatus receives all of the content.

77. A method according to Claim 76, wherein receiving a remaining portion of the content comprises receiving a remaining portion of the content based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

78. A method according to Claim 76, wherein sending a length of the received portion of the content comprises sending a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is received in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining portion of the content including header information that includes one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

79. A method according to Claim 58, further comprising receiving a hypertext transfer protocol (HTTP) HEAD request from the sender at the apparatus, wherein receiving a remaining portion of the content comprises receiving the remaining packets in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets.

80. A computer program product for uploading content, the computer program product comprising at least one computer-readable storage medium having computer-readable program code portions stored therein that in response to execution by a processor, cause an apparatus to at least perform the following:

receiving an upload request for content from a sender via a network, wherein the content comprising a plurality of data packets;

determining, in response to the request, an upload schedule relating to at least one of a time and a manner of the sender uploading the content to the apparatus in an upload session;

receiving the content from the sender in accordance with the upload schedule;

tracking during the upload session received data packets and assembling a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session; and
after an interruption occurs in the upload session, determining to transmit the list of completely uploaded data packet identifiers to the sender for transmitting to the apparatus each of the remaining packets that is not completely uploaded.

81. - 85. (Canceled)

86. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction defining processing the content to thereby direct the sender to process the content, and the processed content is received.

87. A computer program product according to Claim 86, wherein the upload schedule includes at least one instruction defining at least one of transcoding or truncating at least a portion of the content, and wherein receiving the content comprises receiving the at least one of the transcoded or truncated portion of the content.

88. A computer program product according to Claim 86, wherein the upload schedule includes at least one instruction defining breaking up the upload content into a plurality of portions, and wherein receiving the content comprises receiving the portions of the upload content.

89. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and the content is received based upon the at least one deadline.

90. A computer program product according to Claim 80, wherein the content includes a plurality of pieces, and wherein determining an upload schedule comprises the upload schedule includes an ordering of the plurality of pieces of the content, and at least a portion of the content is received based upon the ordering of the plurality of pieces of the content.

91. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the content is uploaded, and the content is received based upon the content and the at least one network.

92. A computer program product according to Claim 80, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and the content is received based upon the at least one upload time.

93. A computer program product according to Claim 80, wherein the apparatus is caused to further perform:

sending a trigger to the sender to send an upload request before receiving the upload request, wherein an upload request is received in response to the trigger independent of interaction from a user of the sender.

94. A computer program product according to Claim 80, wherein the apparatus is caused to further perform:

receiving an upload descriptor and thereafter receiving the content, determining if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content; and

if an interruption occurs in uploading the plurality of data packets, recovering the content based upon the upload descriptor.

95. A computer program product according to Claim 94, wherein recovering the content comprises:

determining at least one remaining data packet to be received at the apparatus to thereby complete uploading of the plurality of data packets of the content;
instructing the sender to send the at least one remaining data packet; and
receiving the at least one remaining data packet such that the apparatus receives all of the content.

96. A computer program product according to Claim 94, wherein the apparatus is caused to further perform: pushing the upload schedule to the sender thereby automatically uploading the content in accordance with the upload schedule, wherein the upload descriptor includes information of a preferred time, place and technology for uploading the content, and the upload session is interrupted by user intervention.

97. A computer program product according to Claim 96, wherein the apparatus is caused to further perform:

monitoring the received data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading the plurality of data packets such that the apparatus receives less than the plurality of data packets of the content; and

if an interruption occurs in uploading the plurality of data packets, recovering the content such that the apparatus receives the plurality of data packets.

98. A computer program product according to Claim 80, wherein the apparatus is caused to further perform:

determining an interruption occurs in uploading the content when the apparatus only receives a portion of the content;

if an interruption occurs in uploading the content, sending a length of the received portion of the content to the sender; and

receiving a remaining portion of the content to thereby recover the content.

99. A computer program product according to Claim 98, wherein the remaining portion of the content is received based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

100. A computer program product according to Claim 98, wherein sending a length of the received portion of the content comprises sending a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique, and the remaining portion of the content is received in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining portion of the content including header information that includes one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

101. A computer program product according to Claim 100, further comprising receiving a hypertext transfer protocol (HTTP) HEAD request from the sender at the apparatus, wherein

receiving a remaining portion of the content comprises receiving the remaining packets in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes receiving the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets.

102. A method comprising:

determining to transmit an upload request for content from an apparatus via a network to a recipient, wherein the content comprising a plurality of data packets;

receiving from the recipient at the apparatus, in response to the upload request, an upload schedule relating to at least one of a time and a manner of uploading the content in an upload session;

determining by the apparatus to upload the content to the recipient in accordance with the upload schedule;

after an interruption occurs in the upload session, receiving at the apparatus a list of completely uploaded data packet identifiers each of which uniquely identifies one corresponding data packet within the upload session; and

reestablishing by the apparatus the upload session to upload to the recipient each of the remaining packets that is not completely uploaded.

103. A method according to Claim 102, further comprising deleting the content from the memory after uploading the content to the recipient.

104. A method according to Claim 102, wherein the upload schedule includes at least one instruction dependent upon a state of at least one of the recipient or the apparatus, and wherein

the method further comprising receiving information reflecting a current state of at least one of the recipient or the apparatus before uploading the content to thereby enable the apparatus to upload the content based upon the at least one instruction dependent upon the state, and the information reflecting the current state, of at least one of the recipient or the apparatus.

105. A method according to Claim 104, further comprising receiving information reflecting a current state comprising at least one of a connectivity, location, actual movement or predicted movement of at least one of the recipient or the apparatus.

106. A method according to Claim 102, wherein the upload schedule includes at least one instruction dependent upon a state of at least one network over which the content is uploaded, and wherein the method further comprising receiving information reflecting a current state of the at least one network before uploading the content to thereby enable the apparatus to upload the content based upon the at least one instruction dependent upon the state, and the information reflecting the current state, of the at least one network.

107. A method according to Claim 106, further comprising receiving information comprising at least one of traffic on the at least one network or bandwidth available to at least one of the recipient or the apparatus on the at least one network.

108. A method according to Claim 102, wherein the upload schedule includes at least one instruction defining processing the content, and wherein the method further comprising processing the content thereby uploading the processed content.

109. A method according to Claim 108, further comprising at least one of transcoding and truncating at least a portion of the content thereby uploading the at least one of the transcoded or truncated portion of the content.

110. A method according to Claim 108, further comprising breaking up the upload content into a plurality of portions to thereby uploading the portions of the upload content.

111. A method according to Claim 102, wherein the upload schedule includes at least one instruction defining at least one deadline for uploading the content, and wherein the method further comprising uploading the content based upon the at least one deadline.

112. A method according to Claim 102, wherein the content includes a plurality of pieces, wherein the upload schedule includes at least one instruction comprising an ordering of the plurality of pieces of the content, and wherein the method further comprising uploading at least a portion of the content based upon the ordering of the plurality of pieces of the content.

113. A method according to Claim 102, wherein the upload schedule includes at least one instruction based upon the content and at least one network over which the content is uploaded, and wherein the method further comprising uploading the content based upon the content and the at least one network.

114. A method according to Claim 102, wherein the upload schedule includes at least one instruction based upon at least one upload time of the content determined based upon the content and at least one network over which the content is uploaded, and wherein the method further comprises uploading the content based upon the at least one upload time.

115. A method according to Claim 102, further comprising receiving a trigger to send an upload request before sending the upload request, and sending the upload request in response to the trigger independent of interaction from a user of the sender.

116. A method according to Claim 102, further comprising
sending an upload descriptor and thereafter uploading the content,
determining if an interruption occurs in uploading the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and if an interruption occurs in uploading the plurality of data packets, enabling the recipient to recover the content based upon the upload descriptor such that the recipient receives the plurality of data packets.

117. A method according to Claim 116, further comprising deleting the uploaded content from a storage of the sender without interaction with a user of the sender, after completing the upload session.

118. A method according to Claim 102, wherein the content comprises a plurality of data packets, and wherein the method further comprising uploading the plurality of data packets and at least one information packet regarding at least one group of at least one data packet.

119. A method according to Claim 118, further comprising:
uploading the at least one information packet that enables the recipient to monitor the uploaded data packets to determine, based upon at least one information packet, the at least one information packet including information of a number of data packets to be received between the at least one information packet and an information packet immediate before or after the at least one information packet, if an interruption occurs in uploading

the plurality of data packets such that the recipient receives less than the plurality of data packets of the content, and

if an interruption occurs in uploading the plurality of data packets, recovering the content such that the recipient receives the plurality of data packets.

120. A method according to Claim 102, further comprising:

determining if an interruption occurs in uploading the content such that the recipient only receives a portion of the content, and

if an interruption occurs in uploading the content, receiving a length of the received portion of the content to thereby uploading a remaining portion of the content to the recipient.

121. A method according to Claim 120, further comprising uploading a remaining portion of the content based upon one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

122. A method according to Claim 120, further comprising receiving a length of the received portion of the content in accordance with a hypertext transfer protocol (HTTP) HEAD technique; and uploading the remaining portion of the content in accordance with one of a HTTP POST or a HTTP PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining portion of the content including header information comprising one or more bit ranges corresponding to a list of one or more packet identifiers of the remaining one or more packets.

123. A method according to Claim 122, further comprising:

sending a hypertext transfer protocol (HTTP) HEAD request to the recipient; and uploading the remaining packets are uploaded in accordance with one of a HTTP POST or a HTTP

PUT technique, wherein the one of the HTTP POST or HTTP PUT technique includes uploading the remaining packets including header information comprising a list of one or more packet identifiers of the remaining one or more packets.

124. A method according to Claim 58, further comprising:

receiving an upload descriptor of the content from the sender via the network at the apparatus in accordance with the upload schedule, the upload descriptor including a size of the content; and

reestablishing by the apparatus the upload session further based upon the upload descriptor.

125. A method according to Claim 124, further comprising:

determining an interruption occurs in uploading the plurality of data packets when the apparatus receives less than the plurality of data packets of the content; and

if an interruption occurs in uploading the plurality of data packets, recovering the content based upon the upload descriptor such that the apparatus receives the plurality of data packets.

126. A method according to Claim 78, wherein the at least one information packet further includes information uniquely describing the data packets before or after the information packet.

127. A method according to Claim 126, wherein information uniquely describing the data packets includes a sequence of packet cyclic redundancy checks.

128. A method according to Claim 78, wherein the number of data packets to be received between two information packets varies.

129. A method according to Claim 58, wherein the network includes a cellular network.

130. A method according to Claim 102, further comprising:

after the interruption, receiving at the apparatus an instruction to reestablish the upload session, the instruction-including an identifier of the content and an identifier of the one interrupted packet.